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ABSTRACT

Bloom's Taxonomy is a classification device that orders educational objectives in a hierarchical fashion, ranging from relatively simple skills of remembering to more complex skills of evaluating and judging. In the classroom, the taxonomy can be used as the basis of a series of questioning strategies designed to foster intellectual skills. In a reading program, for example, teachers could have students read books, stories, or tall tales, and then answer questions based on the taxonomy, with knowledge derived from the reading. The questions could be prepared by the teacher, along with the answers, and placed in a "folderbook," a learning package that displays each questioning level, a vocabulary page, an attractive cover, and a brief summary of the book. This can serve as a model for students, who are then asked to prepare their own folderbooks for a favorite book. Students have reported that they have a better understanding of a book after using a folderbook as a study guide. The folderbooks also seem to create a pride in work that assists in promoting academic achievement. (FL)

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READING COMPREHENSION THROUGH "FOLDERBOOKS": DEVELOPING HIGHER ORDER THINKING STRATEGIES USING CHILDREN'S BOOKS

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Reading Comprehension Through "Folderbooks": Developing Higher Order Thinking Strategies Using Children's Books

The concept of thinking strategies has received much attention since 1956 when Bloom and others published The Taxonomy of Educational Objectives Handbook I: Cognitive Domain (Bloom, Engelhart, Furst, Hill and Krathwohl). Bloom's Taxonomy, as it is called, is a "classification device" whereby educational objectives can be ordered in a hierarchical fashion, ranging from relatively simple skills of remembering to more complex skills of evaluating and judging (Bloom, et al., pg. 10).

For educators, one of the purposes of the Taxonomy is to devise curricula based on increasingly more difficult educational objectives to provide a range of critical thinking skills to promote "understanding." In the classroom, the Taxonomy can be defined as an objective-based curriculum (Reams, 1981), or as a series of questioning strategies based on the hierarchy or taxonomy to foster intellectual skills (Norris, 1966; Sadker and Sadker, 1977). The latter concept is the essence of this article.

Review of the Taxonomy as a Questioning Strategy

The Taxonomy consists of six levels, each more difficult than the preceding one. The levels are Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation. In order to think about each of these levels as a questioning strategy, as opposed to only an educational objective, one must fully understand the definitions entailed by each of the objective levels, how each level is inter-

related with the other levels, and how the questioning strategies are evolved. According to Sadker and Sadker (1977) the Taxonomy can be used as a springboard to foster higher order thinking skills. The following is their brief description of the Taxonomy and descriptors that explicate it as a questioning device (Sadker and Sadker, 1977, pg. 155-183).

Knowledge: repeating from memory. Descriptors: define, recall, recognize, remember, who, what, where, when.

Comprehension: rephrasing information; comparing information. Descriptors: describe, compare, contrast, rephrase, explain the main idea, put in your own words.

Application: applying knowledge to determine a single answer. Descriptors: apply, classify, sort, choose, employ, write an example of, solve, how many, which, what is.

Analysis: identifying motives or causes; drawing conclusions; determining evidence. Descriptors: support, analyze, conclude, why.

Synthesis: making predictions; producing original communications; providing solutions to complex problems. Descriptors: predict, produce, write, design, develop, draw, create, synthesize, construct, improve upon, devise.

Evaluation: making judgments; offering opinions. Descriptors: judge, argue, validate, decide, evaluate, assess, state which is better, justify.

Application of the Taxonomy to a Reading Program

In applying the levels of the Taxonomy to a reading program, teachers must be committed to the questioning strategies derived from the educational objectives outlined above, and to the outcome that students will be introduced to higher order thinking skills. The core of the reading program is to have the students read books, stories, tall tales, (or whatever teachers prefer), and then answer questions based on the Taxonomy with the knowledge derived from the reading experience. Because the questions are already written, they act as a study guide for the student, as well as a motivator to read more, and a starting point for developing higher order thinking skills.

To start the program a model is almost necessary. Students will be better able to retain and transfer a new concept if they see an outline or model to follow. To make a model, the teacher selects a book or story that is interesting to the students and will act as a bridge to the future success of the total concept. If the book is well-liked by the students, the concept will probably be more positive leading to greater success. After reading the book or story, the teacher will write four to ten questions for each of the six levels of the Taxonomy using the descriptors as a guideline for proper wording. Below are sample questions the author has used based on Charlie and the Chocolate Factory (Dahl, 1964).

K. Of what was Mr. Wonka's private yacht made?

C. Compare the characters Augustus Gloop and Charlie Bucket.

Ap. What is the moral of the story?

An. Why was the Golden Ticket important to each child?

S. What would happen to the Oompa-Loompas if the chocolate factory went out of business? Write a story explaining their situation.

E. In your opinion, did each of the five children get what they deserved? Justify your response.

When questions have been prepared for each level, along with answers, the teacher is prepared to make a "folderbook," which is a learning package that neatly displays each questioning level, a vocabulary page, an attractive cover and a brief summary of the book.

The "folderbook" itself is made of two manila file folders glued together so as to create a three-sided folder that will stand on a desk and act as a study carrel. Inside the three-sided folder are placed six library pockets, one for each level of the Taxonomy, and room to attach a reproducible vocabulary page. In each pocket are 3 x 5 cards with the questions that were written for that specific level. There are usually two to three questions per card. The vocabulary worksheet, usually in the design of a crossword puzzle, word search puzzle, maze, or criss-cross puzzle, reflects vocabulary found in the book or story. On the front cover is an attractive drawing or design or book jacket about the book, and on the back cover is a short written summary of the book or story. The cover of the "folderbook" should act as an enticer or motivator to encourage others to read the matching book.

After the model has been completed, read the entire book or story to the class. When appropriate, usually after each reading, ask questions from the model folderbook to the class in order to introduce them to the higher order thinking skills, and also to provide motivation for

the next step.

When all the students have participated in the discussion of the model folderbook and book, and have been introduced to the variety of question types one can ask, then the teacher is ready to begin the next phase of the program.

Introduce the students to Bloom's Taxonomy and explain to the students that they are going to write questions for their favorite books and make their own folderbook similar to the teacher's model. When they become involved in actually applying the Taxonomy to a favorite book, they not only use higher order thinking skills, but they also apply them to the underlying meaning of their book. After each student has chosen and read a book or story, provide time each day for the students to write or dictate questions and answers for each of the levels. Generally, one day can be spent on each level by following the procedure outlined below.

First, Knowledge questions are explained and samples of Knowledge questions are provided. When the students seem to understand what Knowledge questions entail, ask them to write or dictate a specific number of Knowledge questions and answers based on their book. Depending upon the student, the book, or the circumstance, two to ten questions and answers are needed. The questions and answers are then corrected by the teacher to ensure that the students have understood the concept. The same basic procedure is followed for each level. Some teachers are reluctant to let second and third grade students write Synthesis and Evaluation questions, hence the procedure stops at Analysis questions. Some teachers combine levels by putting

Comprehension/Application together, Analysis/Synthesis together, or Synthesis/Evaluation together. No matter at what level the teacher decides to "stop" or how the teacher wants to combine levels, the students are receiving exposure to asking and answering questions of increasing difficulty, thus honing their critical thinking skills. When all levels of questions and answers have been completed, and the questions have been transferred to 3 x 5 cards, the creative or fun part of the exercise begins. Here is where the students create their own folderbook learning package based on their favorite story, following directions similar to those used by the teacher to make the model. The students may follow the teacher's model exactly, or they may create their own layout for the library pockets, vocabulary worksheet page, cover design and summary statement. Ample time should be given to the students to work on the folderbook jackets. The students have worked hard on their questions so the design of a folderbook learning package is a just reward. The author has discovered that the more time spent on the finished product, the nicer the product looks. When the folderbook is completed, the teacher has a collection of books with matching folderbooks, and a set of answers for each. The students have learned about questioning strategies inherent in the Taxonomy, as has the teacher, but the lesson is not over yet.

The final step of the process is the usage of the folderbooks by other students, either individually or in small groups. As a small group procedure, a reading group reads a book/folderbook set. The questions in the folderbook act as a study guide for the group to use to become familiar with the book before reading it, to follow while reading the

book, and to answer and discuss with the group and the teacher after reading the book. The answers can be oral, written or both, depending upon the teaching method chosen by the teacher. As an individual assignment, a student can read a book, using the matching folderbook as a study guide, write or record answers to some or all of the questions in each pocket (depending upon the ability of the student), and then discuss the book with the teacher. In each case, whether used as a group or individual procedure, the teacher meets with the students involved to discuss the book.

Some students might be particularly adept at making folderbooks, and want to make more. These students could be asked to make other folderbooks for their favorite stories or books, or to make folderbooks based on a teacher-selected list. Whatever the case, once students have been introduced to the thinking skills inherent in the Taxonomy, they will be on their way to using the skills in other situations.

Outcomes

No statistical studies have been carried out on "folderbook classrooms" regarding comprehension, reading growth, or reading enjoyment, however, many observations on the part of teachers, supervisors and principals have been most favorable.

After the first try, when answers (but not the questions) are generally of poor quality due to lack of familiarity or experience with higher order thinking strategies, the students seem to have a clearer understanding of their reading assignments, and some practical application of critical thinking skills. Oftentimes students in a class state that a Synthesis level question was asked, or a Comprehension level question

was asked. Other times students have replied that they are better at Analysis level questions than Synthesis level questions. One teacher reported that students asked for "Bloom questions" in all their subjects so they could practice their thinking skills all the time.

Teachers have reported they use higher order questioning strategies after becoming familiar with the Taxonomy and descriptors. Teachers also reported that intermediate grade students were able to justify their answers after learning about Evaluation level questions.

Students have reported they have a better understanding of a book after using a folderbook as a study guide. They liked knowing beforehand was was expected of them. They also stated the folderbook helped them understand the book better while they were reading it.

Finally, because the final product is a student-made folderbook package on a favorite book, the students feel extra "ownership" in their classroom, especially when the folderbooks are prominantly displayed in the room, or when chosen by a friend. Classroom ownership and pride in work are two great incentives to promote student achievement.

Currently such folderbook packages are being used in a number of classrooms and schools in California. The teachers using the process feel the students are being introduced to some good books while learning how to use higher order thinking strategies. They also feel their teaching has improved in other areas of the curriculum as they apply the skills learned from the Taxonomy to their teaching repertoire.

Variations on a Theme

The following are examples showing how the concept has been successfully adapted at four different grade levels from Kindergarten to eighth grade.

One eighth grade literature teacher has over a hundred student-made folderbooks. Each semester the students are required to read and answer one folderbook and create another folderbook. The teacher has been using the concept for three years in two literature classes and feels it has completely "turned around the old program." The students in the classes "love to read now," according to their teacher. Since this teacher has an excellent collection of colorful folderbooks displayed all over the room, the students have many opportunities to practice their newly learned thinking skills.

Another teacher has the fifth grade students make folderbooks for the second grade students, as a warm-up exercise. When the fifth graders apply the concepts using "easier" reading material, they are more able to use the concept to books at their own reading level, which is the next assignment. In this case, both fifth graders and second graders profit from the process.

One first grade teachers makes up folderbooks with two, three and four levels of questions. The folderbooks are based on favorite tales, short stories and nursery rhymes loved by the students. The stories are read or told to the class and the folderbook questions are asked and answered in large group situations. As the children become proficient with two levels of questions, the teacher advances to the third level, until by the end of the year, the teacher has advanced to the

fourth level of the Taxonomy. After a folderbook has been discussed with the class, it is displayed in the room along with its matching story, where individual children or small groups may use the folderbook, after reading the story.

Finally, one Kindergarten teacher searches for classical or interesting or descriptive pictures to share with the students. On the back of each picture the teacher lists ten to fifteen questions based on the Taxonomy related to the picture. Throughout the year, the teacher attempts to foster higher order thinking skills by asking the children to describe the picture, compare what is in the picture to something the children are familiar with, to predict what might happen next, to determine what is happening in the picture, and so on. In this instance, the children are introduced to higher order thinking strategies, given a chance to look at and interpret some beautiful pictures, including "old masters," and are given a chance to verbalize their ideas.

Conclusions

There are many variations to the basic process, the idea is to apply the concept so students will have contact with higher order thinking strategies. Research has shown that using the thinking strategies developed from the Taxonomy enhances student achievement (Madaus, Woods, and Nuttall, 1973). The application of the Taxonomy to a reading program might also enhance reading ability and bring about appreciation for good books.

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